

Instructions for WH 7016 Digital Thermometer

Using the Control Buttons:

RST: Press and hold the RST button for three seconds to switch the unit on or off.

SET: The SET button has two functions:

- Temperature Set Point: Press the SET button once to enter the control temperature setting and then press ▲ or ▼ to adjust to the desired set point. Press SET button again to exit temperature setting mode.
- System Menu: Press and hold the SET button for three seconds to enter the system menu settings, then press the ▲ or ▼ button to select the menu item for the parameter to be adjusted. Once the required menu item is displayed press the SET button once again to enter the adjustment mode, press ▲ or ▼ to adjust the parameter to the required setting. After adjustment press RST key once briefly to exit - or wait for 5 seconds for the unit to exit automatically.

▲: increase key

▼: down key

Operating Instructions

Status LED's: The left side of the display contains 2 LED's which indicate status of the unit.

1. **WORK LED** –
 - a. No light = the relay is not activated.
 - b. Light is on (steady state) = relay is activated i.e. power is flowing to the load.
 - c. Light is on (flashing) = time delay mode prior to activation of the relay.
2. **SET LED** – Light is on (steady state) when the unit is in the parameter setting mode.

Operating the Unit:

Press "RST" button to turn on thermostat. To turn off the unit press the "RST" button for 3 seconds

Parameter Setting

◆ Setting the unit to Cooling or Heating mode:

- Press "SET" button and hold for more than 3 seconds to enter the menu display.
- The display will show "HC", (if not then press press "▲" or "▼" until "HC" appears).
- Press the "SET" key again to enter the menu mode.
- Press the "▲" or "▼" to adjust the display – "C" to set to cooling mode or "H" to set to heating mode.
- Press "SET" to exit the menu – or wait for 5 seconds.

◆ Temperature Differential:

This is the interval in °C between the temperature at which the relay activates (the set point) and the temperature at which it turns off again (the deactivation point). In heating mode: the set point + the differential = the deactivation point. In cooling mode: the set point - the differential = the deactivation point. The differential can be adjusted from 1°C to 15 °C.

◆ Setting the Temperature Differential:

- Press "SET" button and hold more than 3 seconds to enter the menu display,
- Press "▲" or "▼" button until "d" appears on the display.
Press the "SET" key to display the differential value,
- Press "▲" or "▼" key to adjust the value as required.
- Press "SET" to exit the menu – or wait for 5 seconds.

◆ Temperature calibration:

This function allows the unit to be calibrated to show the correct temperature against a standard thermometer. The unit can be adjusted to plus or minus 5 degrees.

◆ Setting Temperature calibration:

- Press "SET" button and hold more than 3 seconds to enter the menu display.
- Press the "▲" or "▼" button until "CA" appears on the display.
- Press the "SET" key to display the temperature correction settings,
- Press "▲" or "▼" key to adjust the correction setting as required.
- Press "SET" to exit the menu – or wait for 5 seconds.

For example: If a standard thermometer (or other temperature gauge known to be correct) reads, say, 25 degrees but the display on the unit reads 27 degrees then the CA parameter must be set to -2 in order for the display to correctly show 25.

◆ Compressor Delay Protection:

This function sets the delay time between when the set point (i.e. activation temperature) is reached and actual activation of the relay. The main use of this function is to prevent rapid cycling of e.g. refrigeration compressors. Example: In Cooling mode, if the set point (say, -20 degrees) is reached the unit waits for the delay time (say, 5 minutes) and if the temperature is higher at that time than the set point the relay is activated (thus turning on the compressor).

This function is normally only used for cooling applications. When in heating mode it should normally be set to "0".

◆ Setting the Delay function:

- Press "SET" button and hold more than 3 seconds to enter the menu display.
- Press the "▲" or "▼" button until "PT" appears on the display.
- Press the "SET" key to display the time delay settings,
- Press "▲" or "▼" key to adjust the time delay as required – to a maximum of 10 minutes.
- Press "SET" to exit the menu – or wait for 5 seconds.

◆ Upper and Lower Temperature functions:

These functions set the upper and lower limits within which the unit can be adjusted. Example: when HS is set to +15 and LS to -10 the set point can only be adjusted within these limits. If it is required to set the set point outside this range then HS and/or LS must be changed first.

◆ Setting the Upper and Lower limits:

- Press "SET" button and hold more than 3 seconds to enter the menu display.
- Press the "▲" or "▼" button until "HS" appears on the display.
- Press the "SET" key to display the temperature settings,
- Press "▲" or "▼" key to adjust the upper temperature limit as required (it can be set anywhere between -50 and +110).
- Press "SET" to exit the menu – or wait for 5 seconds.

- Press "SET" button and hold more than 3 seconds to enter the menu display.
- Press the "▲" or "▼" button until "LS" appears on the display.
- Press the "SET" key to display the temperature settings,
- Press "▲" or "▼" key to adjust the lower temperature as required (it can be set anywhere between -50 and +110).
- Press "SET" to exit the menu – or wait for 5 seconds.

Other

- When the sensor is disconnected the display shows "---".
- When the sensor detects the temperature is below -50 degrees, the display shows the "LLL".
- When the sensor detects a temperature higher than 110 degrees, the display shows "HHH".

Warning

- ◆ The load must not exceed the rated capacity of 5 Amps. Exceeding this may result in machine damage and could cause a fire.

Features and Specifications of the WH7016 Digital Thermometer

Features:

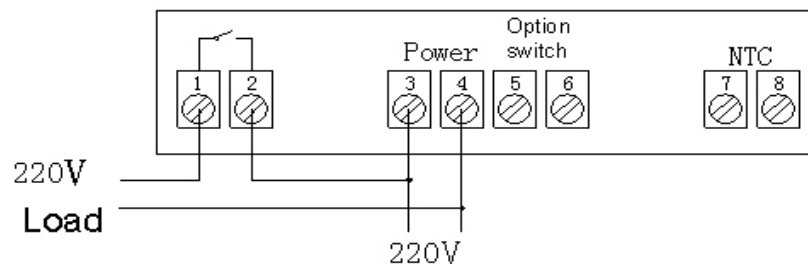
- A mini temperature controller
- With large and clear LCD display for better readability
- Wide temperature measuring range
- High performance and durable housing
- Heating and cooling control
- Temperature calibration function
- Compressor delay protection function
- Control parameters can be locked – disabling user changes
- Upper and lower limits of temperature can be set

- Can be used for domestic freezers, water tanks, refrigerators, industrial chillers, boilers, steamers, industrial equipment and other temperature-controlled systems
- Comes with temperature sensor probe

Specifications:

- Temperature Measuring Range: -50 ~ +110 deg C
- Temperature Controlling Range: -50 ~ +110 deg C
- Temperature Measuring Error: ± 0.5 deg C
- Sensor: NTC (10K / 3435)
- Control Accuracy: 1 deg C
- Working Voltage: AC 220V
- Working Current: Max. 220mA
- Relay Contact Current: AC 5A / 220V
- Operating Temperature: 0 ~ +50 deg C
- Storage Temperature: -10 ~ +60 deg C
- Sensor probe cable length: Approx. 40 inch / 1 meter
- Item Dimensions (L x W x H): Approx. 3.3 x 3 x 1.3 inch (8.5 x 7.5 x 3.4 cm)

Wiring Diagram



Terminals 1 and 2: Relay contacts – when the relay activates power flows to the load.

Terminals 3 and 4: Connect to power supply according to the specific voltage for this unit - See product identification on back of unit (may be 240v, 120v or 12v). **Refer to wiring diagram for more detail.**

Terminals 5 and 6: If these terminals are connected (i.e. short circuited by jumper or switchable link) the parameters of the unit are locked and cannot be modified by the user.

Terminals 7 and 8: Temperature sensor connection

Note: The load refers to the heating or cooling equipment being controlled by the unit.